



Bulacan State University
College of Architecture and Fine Arts
City of Malolos, Bulacan 3000, Philippines
Tel. No. (044)919-7800 to 99 local 1016
cafabsu@live.com



Research Paper:

Hindrances 2 OpPORTunities: Turning Site Liabilities into Design Advantages through Architourism and Green Architecture

Prepared by:

Umali, Alexandra

BSAR 3A

Submitted to:

Arch. Edilberto Martinez

Date of Submission:

April 26, 2019

CHAPTER I: Introduction

- A. Background of the Study
- B. Purpose of the Study
- C. Methodology

CHAPTER II: Presentation of Data

- A. Case Studies
 - I. Fishport Operations
 - II. Standard Dimensions
- B. Research Topics
 - I. Architourism
 - II. Relating Different Approaches with Architourism
 - Sustainable
 - Tropical
 - Vernacular
 - III. Site Features (See Site Development Plan)
 - Solar Lighting for Parking Lots
 - Anti-slip Concrete Paving
 - Permeable Grass Paving
 - Bioswale
 - IV. Building Features
 - Rainwater Harvesting System
 - Green Wall
 - V. Building Materials

CHAPTER III: The Site

- A. Site Analysis
- B. S.W.O.T. Analysis

CHAPTER IV: Design Solutions

- A. Conclusion
 - Bubble Diagram
 - Programming

CHAPTER I: Introduction

Fishing is one of the main sources of income of the Filipinos since the ancient times. Living in an archipelagic country, we have all the marine resources that we need in fulfilling this job. Having fishports have been essential to every city all around the Philippines, either or both serving local and foreign dealers or customers, thus this type of structures must actually be prioritized for it not only boost the place's economy but also promote the said place.

The existing Panasahan Fishport had been the source of livelihood for many of its workers and the font of supply of seafood for several shop owners and local fish dealers. We see its potential to be developed into a bigger commercial site through relocation resulting to a more appropriate and sufficient working and trading place for its users.

A. BACKGROUND OF THE STUDY

A fishport could be the landmark of a certain place, and in this project's case, of Baranggay Panasahan. Our team specifically focused on this factor and considered its importance in terms of promoting the location and helping Panasahan's economic growth. We believe that with this, everything will follow. The application of proper fishport standards and understanding its operations should already be considered right from the start to achieve smoother traffic among the users. The aesthetic value of the structure could greatly affect on the stability of the number of its customers and on its potential of being promoted to foreign dealers or exporters.

Our team regarded the site's tourism value as the top priority of this project and this resulted to finding solutions on how to develop not only an eye-catching structure but also a building that could easily be maintained and has a great sustainability for it to stand the test of time and truly be Panasahan's pride.

B. PURPOSE OF THE STUDY

This study aims to design a new Panasahan Fishport taking into consideration the operations and different processes happening inside the said establishment. It will not only be functional but will also be aesthetically noticeable to ensure the active flow of customers and its promotion to the foreign market. Our group aims to apply Architourism and Green Architecture to achieve this objective.

C. METHODOLOGY

In completing this project, our team first did a background study about fishport operations. We visited a total of four (4) fishports including the existing one in Panasahan. By being familiar with the process and the workers operating in the building, we have gained enough information that will help in zoning the spaces in connection with the flow of work in the said establishment. We then visited the site where the new building will be built,

analyzing the different elements that could affect its Architectural design; topography, vegetation, accessibility, fenestration and, sun and wind orientation. These factors are equally important in the development of the building for the proper usage of the site's natural features and surrounding environment, especially with the fact that it is mostly surrounded by residential areas.

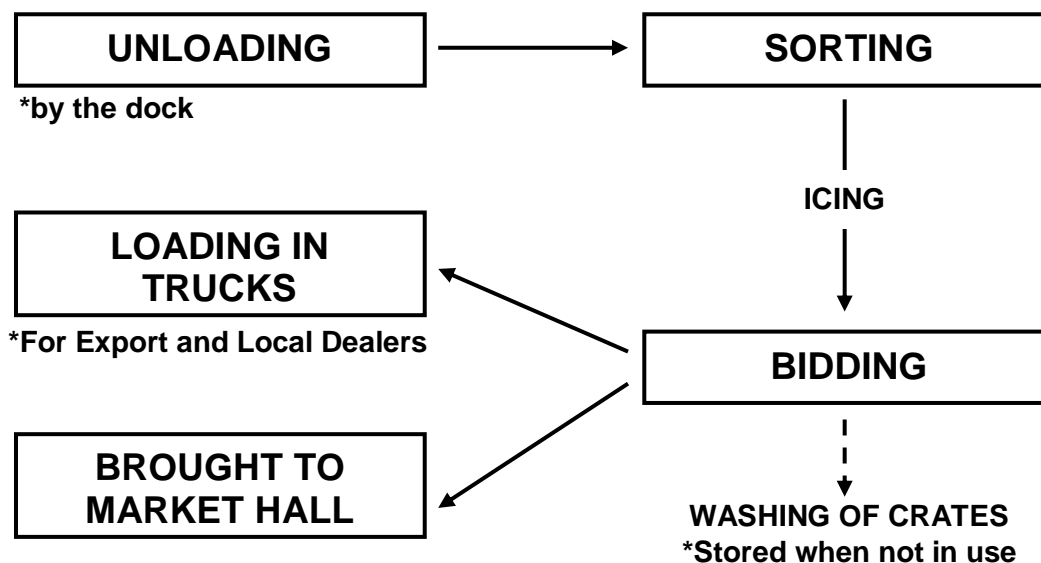
With the help of the aforementioned case studies, site analysis and researching about fishport provisions, we have come up with a plan that ensures the smooth flow of the operations and the effectiveness of the workers in doing their jobs. Lastly, we have chosen two approaches to focus on that would help us in achieving our initial goal of having an equally functional and eye-catching design which are Architourism and Green Architecture.

CHAPTER II: Presentation of Data

A. CASE STUDIES

Our group had visited a total of four (4) fishports or consignations including the main subject of our project, the Panasahan Fishport. The other three includes CGM Consignacion, JKD Consignacion and 3D's Consignacion, all located in Hagonoy, Bulacan. We have discovered that all four had the same process of operations except the final step:

I. Fishport Operations



Differences among the case studies:

	CCM CONSIGNACION	JKD & 3D'S CONSIGNACION	PANASAHAN FISHPORT
OWNERS	The site has a private owner and the offices are rented by multiple (in this case, 4) consignees.	The site has a sole owner who is also the one who owns the consignee (only one).	The site is owned by the government and the offices are rented by multiple (6) consignees.
DEALERS	Only deals with Exporters and Local fish dealers. Selling to shop owners (market vendors) is avoided as much as possible.		Deals with both Local fish dealers and shop owners.

BIDDING	Because there are multiple consignees, bidding is scheduled by batch – one consignee per hour.	All bidders are theirs.	Bidding has no schedule, it's all up to the buyers which consignee they will choose (except dealers).
SORTING	The sorting area is divided into four – for each consignee, lack of space is inevitable but solved by stacking the crates.	Sorting area is sufficient and is divided into two according to their products – prawns and crabs. (They must be separated because it takes longer time to wash/clean the crabs.)	There is one main building where offices are divided for five consignees while the remaining one is separated nearer the dock, only setting up a desk and two ice grinders at the corner. The five consignees share on the wide space in the center of the main building that serves as their sorting and bidding area. Lack of space is inevitable.
OPERATING HOURS	8AM – 2PM	6AM – 12NN	Day shift: 9AM – 12NN Night shift: 10PM – 4AM
PEAK SEASON	Every crate weighs 30-40 kg and the number of crates boats deliver may vary. When it's peak season, around 10 boats would dock <u>per consignee</u> carrying 8-10 crates.	Every crate weighs 30-40 kg and the number of crates boats deliver may vary. When it's peak season, around 30 boats would dock, and they would have 75-100 delivered crates a day.	Every crate weighs 40 kg and the number of crates boats deliver may vary. When it's peak season, around 10 boats would dock per consignee – considering the time.
FUELING SERVICE	No fueling facility	No fueling facility	2 fueling facilities, one operates 24 hours from Monday to Saturday.
WASTE DISPOSAL	Collected by the baranggay dump trucks.		Garbage collected by the dump trucks. Rotten products sold to fish pond owners.

Existing Panasahan Fishport



Space Observations on Existing Ports (Case Studies)

I. Administration Building

Usual offices only include owner, port manager and cashier and one living quarter for the caretaker.

II. Cafeteria

The cafeteria is managed separately.

III. Market Hall

There is no proper market hall and the bidding and sorting areas are usually in the same space.

IV. Ice Plant

Ports do not produce their own ice; they order from manufacturers instead and have a storage area/ freezer for it. Consignees must each have their own grinders.

V. Boat Repair Facility

Boat repair facilities are usually located in another place, mostly near a public bridge, but having a facility in the fish port will be advantageous.

II. Standard Dimensions

1. Fish Crates

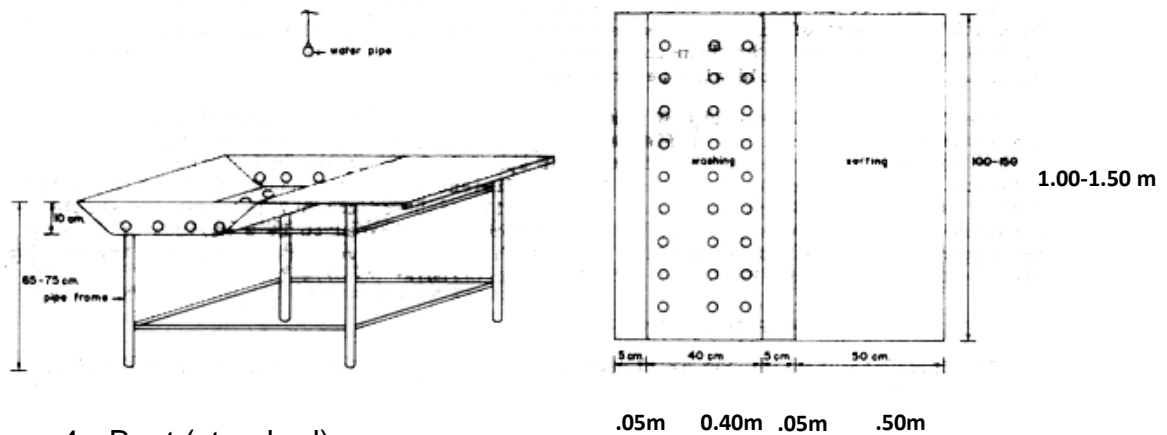
- 600mm x 400mm x 350mm

2. Ice Grinder

Koller Ice Crusher Machine Technical Parameter:

Model	Ice Size	Feeder Size (mm)	Motor Power (KW)	Measurement (L*W*H)(mm)
VIB10	5~10kg	140*250	2.2	755*615*1210
VIB30	20~30kg	200*350	2.2	755*615*1210
VIB50	50kg	250*500	5.5	1050*900*1320
VIB100	100kg	350*600	7.5	1145*930*1400
VIB30	ice cube or tube ice	300*450	2.2	860*675*1085

3. Sorting Table (small scale)



4. Boat (standard)

- 8 meters

5. Truck (regular transfer truck)

Dimensions	Physical	Clearance Needed
Height	12.5ft	14ft+
Mirror to Mirror	10ft	11ft +
Length	30ft	65ft with trailer
Bed Height (Dump)	29ft	30ft +

B. RESEARCH TOPICS

I. ARCHITOURISM

The term “architourism” was coined to refer to architecture as a memorable destination, and it has carved out a niche in the tourism and economic industry. According to the book *Architourism* (edited by Joan

Ockman and Salomon Frausto), there are four categories that define architourism sites: authentic, escapist, exotic and spectacular.

Authenticity is distinguished by the preservation of the building and how it sustained itself through the test of time. **Escapist Architourism** is described as “a kind of rose-tinted lens, abstracting the world from its harsh material reality,” by Neil Leach describing how the manipulation of the materials in the building could make a difference and how they have a big contribution in making the design memorable.

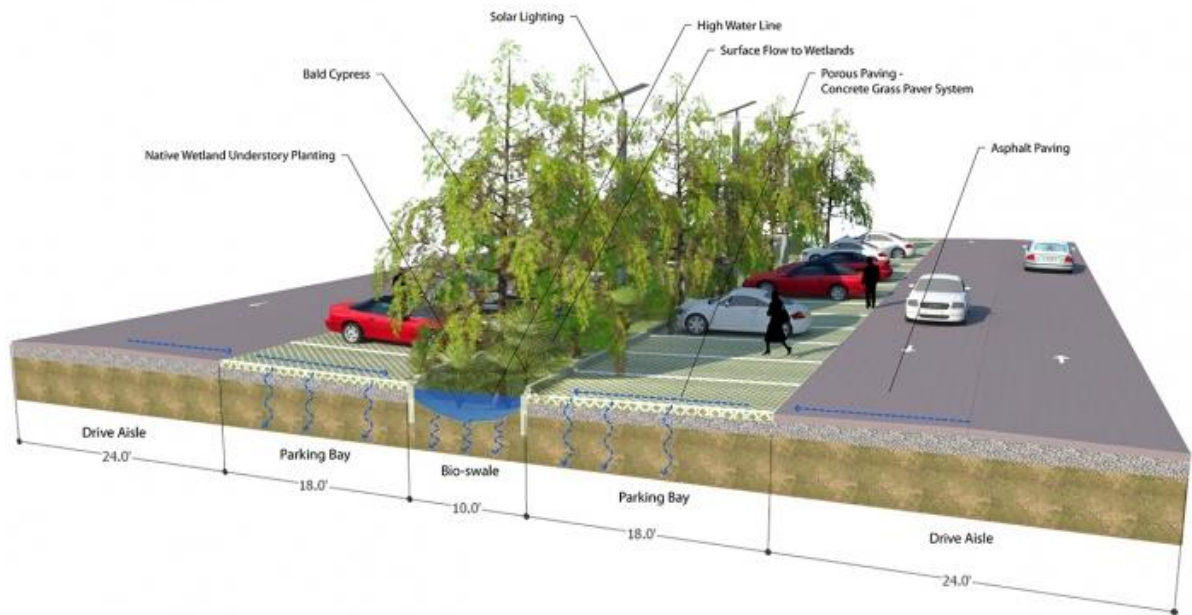
Similarly, **Exotic Architourism** provides the opportunity to encounter otherness and difference. While the building has its general function that could be identified with only looking at its façade or observing and analyzing the type of actions made inside it, Exotic Architourism promotes designs that has more into it. It promotes functions beneath functions, a building’s hidden purpose that could only be discovered if one explores it more.

Lastly, **Spectacular Architourism** provides the design’s uniqueness from its surrounding built environment. It aims to make the building different from others making it more noticeable which results to higher chance of getting attention from people.

II. RELATING DIFFERENT APPROACHES WITH ARCHITOURISM

- **Sustainable**
Sustainable approach could be best connected with Authentic Architourism. It both aims for the longevity of the building, how it will adopt with the environment and will withstand natural calamities.
- **Tropical**
Tropical approach goes hand in hand with Escapist Architourism which focuses on the building materials. Materials were highly considered in terms of the climatic elements within the site which is one of the main subjects in Tropical Architecture.
- **Vernacular**
Vernacular approach and Spectacular Architourism could be related to each other for it both prioritizes the aesthetic appeal of the design.

III. SITE FEATURES



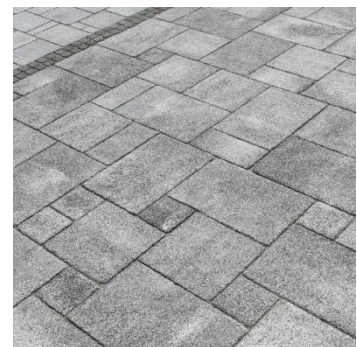
- **Solar Lighting For Parking Lot**

Solar-powered LED lights are an energy efficient and reliable solution for solar parking lot lights. Solar PV system uses photovoltaics (PV) to transform sunlight into electricity. Solar-powered photovoltaic panels, also called modules, contain photovoltaic cells. These cells convert incoming sunlight into electricity that can either stored for later use or directly supply a home or a business with renewable energy.



- **Anti-Slip Concrete Paving**

Concrete pavers are also non-skid and thus a perfect paving solution for areas that are constantly wet and/or frequented by people and vehicles, like pools, walkways, and driveways. It is likewise highly versatile and allows for a great deal of customization with the many available colors, patterns, textures, shapes, and design options.



- **Permeable Grass Paving**

Grass block pavers create an environmentally friendly surface that helps drainage, prevents erosion, and provides a sturdy base for turf grass to grow. Sold individually or in sets of four



or more, grass block pavers typically are made of concrete or recycled plastic.

- **Bioswale**

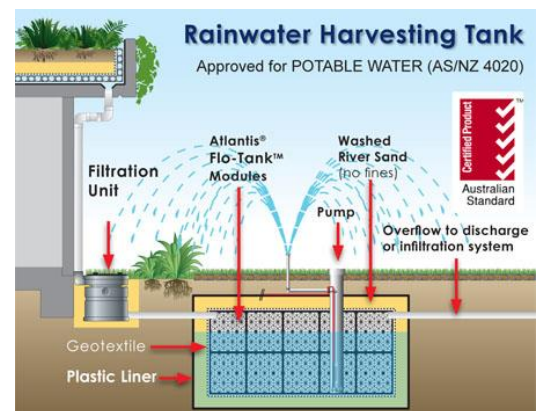
Bioswales are landscaping features that slow and collect polluted stormwater runoff where it will infiltrate soils and be treated by natural elements. Bioswales are similar to rain gardens but whereas rain gardens are typically smaller and used for residential purposes, bioswales are designed to handle larger quantities of water generated from impervious surfaces like parking lots and city streets.



IV. BUILDING FEATURES

- **Rainwater Harvesting**

Rainwater Harvesting is the practice of collecting rainwater runoff from a roof and then storing it for use. Rainwater harvesting is environmentally friendly as harvested rainwater may be used for irrigation, laundry, flushing, process water and with additional treatment may be utilized as drinking water as well.



- **Green Wall**

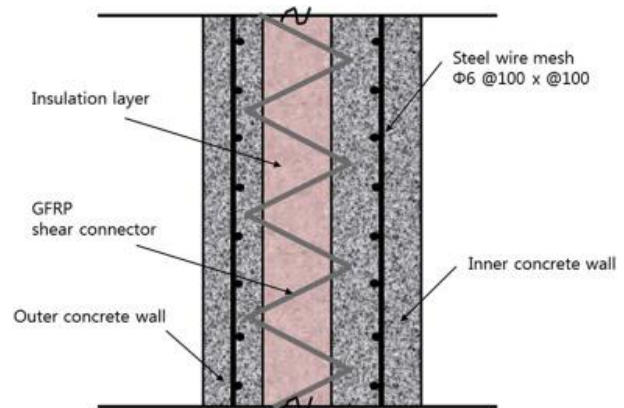
Green walls are vertical structures that have different types of plants or other greenery attached to them. The greenery is often planted in a growth medium consisting of soil, stone, or water. In addition to the visual and biophilic benefits of all green walls, smart and active green walls can feature natural air purification and humidification thanks to the combination of enhanced air circulation, specialized growth medium, and technology.



V. BUILDING MATERIALS

- **Insulated Precast Concrete**

The sandwich wall panel process provides a low cost, thermally efficient and decorative alternative to traditional brick and mortar construction. An insulated sandwich wall panel consists of two wythes (a continuous layer of concrete) separated by an insulated void. Typical panel thickness ranges from 8 to 12 inches depending on the thermal R-value desired.



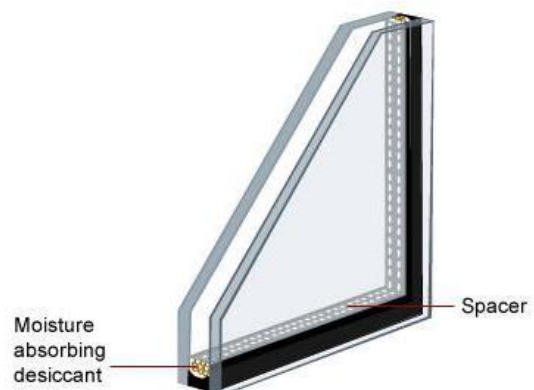
- **Shell Roofing**

Shell roofs are made from structural 'skins' where the shell material is thin in section relative to the other dimensions of the roof and undergoes relatively little deformation under load. They are commonly used where a building interior needs to be free from intermediate walls or columns that might support a more conventional flat or pitched roof. Because of their structural efficiency less material is generally needed compared to more traditional roofs.



- **Soundproof Double-glazed Windows**

Double glazed windows are an ideal energy efficient choice with the added benefit of minimizing noise. The sealed air gap between the two panes acts as an added layer of insulation. This added thermal resistance prevents unwanted heat from coming into the building. This extra insulation lessens your reliance on artificial air conditioners and can ultimately reduce your energy costs.



CHAPTER III: The Site

A.) SITE ANALYSIS

The site is located at Bagna Village, Panasahan, Malolos, Bulacan with a lot area of 8908 square meters. It is surrounded by residential structures to its north, east and south, and the Kalero River in the west. These factors mainly affect the utilization of the Fishport in terms of the access of boats thru the river and the secured number of customers from the residential areas. Though, because of the said residences, noise and odor control must be greatly considered. Its topography is generally flat with a few vegetations on the sides which are mostly along the river. Its only access is the road located north-east of the site which was only a minor one.



B.) S.W.O.T. Analysis

CRITERIA	STRENGTH	WEAKNESS	OPPORTUNITIES	THREATS
Site	Space sufficient to design a fishport. It is near the existing fishport which could provide as an extension/ annex.	Lack of access roads that connects to main road.	Adjacent transport terminal to Pamarawan in the existing Panasahan Fishport could also be transferred.	Site's low topography results to flooding when the tide is high or it rains non-stop.

Climate	The climate is generally warm during the months of February to May, from June to January it is generally cold or fair.	Typhoons typically approach during June to September.	The weather is generally fair on approximately one-third of the year.	
Natural Environment	The site is adjacent to Kalero River which makes it accessible for boats.	The site is surrounded by residential areas which results to the need of odor and noise control.		
Built Environment	Surrounded by residential areas making it accessible for customers.	A bit far from the city proper which won't guarantee enough exposure.		
Economic		The existing fishport is owned by the government and the newly developed one might be the same resulting to having taxes that must be paid by consignees.	A new and modernized fishport may attract foreign exporters which could improve Panasahan's economy.	The site is near to an exclusive village and building a fishport on it might cause issues with the residents and the subdivision owner.

CHAPTER IV: Conclusion

The main concern of this study is to design a new Panasahan Fishport considering both its functional and aesthetic needs despite the liabilities of the site. Also, our team chose to focus on the tourism value of the design to promote it to possible exporters that could help with Panasahan's economic growth. The objective was possible with the use of Architourism as the main concept, and through this, other approaches could be applied. The following statements will explain how we turned the site's liabilities into opportunities through Architourism.

First liability is the lack of access roads around the site. This is such an important factor especially with our main goal in mind – to promote the site locally and to foreign exporters. Thus, we focused in turning the building itself into an uncommon structure, something that would naturally caught the attention of people and would make them venture into the location. Some elements that helped in achieving this are the shell roofing and the green walls which were not only used for their aesthetic value but for their function.

Shell roofing is ideal for long-span and high designs for it requires less material with still being structurally efficient and thermal-friendly. Green walls, on the other hand, helps in controlling the odor within the building by filtering the air especially with the nature of work in the site which is handling seafood.

A fishport is clearly a commercial and industrial type of structure and with it located in a residential area can be a disadvantage. But our team chose to view it in a different way; with the residences around, customers are secured. Hence, this new Panasahan Fishport can be turned into the landmark of the place (Architourism). We didn't only offer a port but also a restaurant, a park (green space) and a tricycle terminal. It may be far from the original Malolos City Proper – another liability – but with its added features, people would certainly be curious about the place.

Its longevity is also one to be sited as it is designed with sustainable materials like insulated prefabricated walls, the aforementioned shell roofing, soundproof double-glazed windows (for noise control), and some special site features like rainwater harvesting system, solar-powered lighting and bioswale landscaping.

With all the said solutions, Authentic, Escapist, Exotic and Spectacular Architourism are achieved giving the structure not only an eye-catching form but also environment-friendly, sustainable and economical functions.

BUBBLE DIAGRAM

Based on the study, these are the space requirements and concluded zoning of our proposed design: (Fig. 1, 2, 3, 4 and 5)